

## REMARKS

The courtesy extended to applicants' representative, Joseph J. Catanzaro, by Examiners Andrew Bainbridge and Supervisory Examiner Kevin Shaver, during a personal interview conducted on April 6, 2011 is sincerely appreciated.

During the interview the outstanding rejections and the prior art cited in the Office Action, particularly US patent nos. 3,024,800 to Lewis and 5,415,328 to Miyazaki, were fully discussed.

The disclosure of the present application with respect to delivery valve 12 was also discussed. In this regard, further clarification of the structure and function of the delivery valve 12 is provided hereinbelow.

Although no agreement was made with respect to allowability of the claims, it is respectfully submitted that the claims as amended herein are in condition for allowance, as well as being consistent with the issues discussed during the interview.

Accordingly, entry of the claims as amended herein is respectfully requested, and allowance is respectfully requested.

## ELECTION/RESTRICTION

In the Office Action, Claims 6, 12 and 15 were withdrawn. The Examiner noted that rejoinder of these claims may be possible depending on the final claim language of the independent claims.

## **DRAWINGS**

In the Office Action, the drawings were objected to with regard to the “outlet” recited in Claim 1. Claim 1 has been cancelled herein without prejudice, and replaced by new Claim 21. Replacement sheet of drawing on which Figs. 1-3 are set forth, is submitted herewith.

## **CLAIM REJECTIONS 35 USC §112**

In the Office Action, Claims 13 and 14 were rejected under 35 USC §112. Claims 13 and 14 are cancelled herein without prejudice.

## **CLAIM REJECTIONS UNDER 35 USC §103**

In the Office Action, Claims 1-5, 7-11, 13-14, and 16-20 were rejected under 35 USC §103(a) over US Patent No. 3,024,800 to Lewis, and further in view of US Patent No. 5,415,328 to Miyazaki.

In the Office Action, it is alleged that Lewis discloses all features of Claim 1, except for the “upper part of the housing in fluid communication with a reference pressure source”. In the present invention this fluid communication is provided by the small throttle opening 24 located in the upper housing wall, i.e., in communication with the surroundings.

In this regard, Lewis does not disclose all of the critical features of the present invention as recited in Claim 1 and as referred to by the Examiner. In the reference to Lewis the Examiner makes certain comparisons, such as the references to portion 20 as “housing”, 29 as “end wall” and 39 as “piston”.

Thereafter the Examiner refers to items 61 - 62 as “upper housing part” and (again) 20 as “lower housing part”.

In the present invention there is a pressure medium chamber (9) (which can in the exemplary embodiments be introduced into the container), whereas in Lewis it is an integral part of the container. Furthermore, in the present invention the pressure medium chamber is provided with a delivery valve 12. In Lewis the valve 34 referred to by the Examiner as being allegedly “identical” to “delivery valve 12” is not provided in or at the pressure medium chamber 12, but in the element referred to by the examiner as “housing 20”. The “housing 20” in Lewis therefore can be removed in its entirety, including the “delivery valve 34”, which means that high pressure gas will flow directly from the chamber 10 to the atmosphere. In the present invention such gaseous flow is not possible.

Furthermore, in Lewis the items 61-62 cannot, and should not be interpreted as an “upper housing part.”

In the present invention a very simple and elegant solution to the pressure setting of the beverage is obtained. In Lewis, element 61 is de facto the end wall of the pressure regulating chamber and thus the end wall as meant in present claim 1. In Lewis, the spring 50 loading the piston 39 acts on the washer 52, which is positioned against an end of a threaded sleeve 53 screwed into a central portion of the element 61. A disc 62, completely free and placed apart from the chamber (no number) between the piston 39 and the element 61 is screwed into the housing 20 in order to lock the element 61 into place. The pin 54 extends through the threaded sleeve 53 and is connected to a further washer 51 at the opposite side of the spring 50, such that it can rotate, but not move axially relative to the washer 51. Rotation of the pin 54 (by engagement of a

portion extending outside the chamber) will lead to a rotation of the sleeve 43 relative to the element 61, thus tautening or loosening the spring 50 (depending on the direction of rotation).

In Miyazaki an atomizer is shown in Fig. 1. Such device is unsuitable for use in the present invention or even for combination with Lewis, as shall be explained hereinbelow.

Miyazaki discloses an aerosol container (basically referred to by reference sign 1) for atomizing a mixture of a fluid to be dispensed and a pressurizing gas, both stored inside the container 1. The storage pressure inside the container is therefore highest when completely filled, and lowest when almost empty, whereas the pressure will also largely depend on the temperature of the container (i.e. of the content).

First of all the arrangement of Miyazaki is absolutely unsuitable for beer, since beer has a CO<sub>2</sub> content which should not be influenced by the pressure medium. Beer should have a CO<sub>2</sub> content that should be maintained as far as possible throughout its life cycle. In the device of Miyazaki, the CO<sub>2</sub> content would contrary to that change, depend on at least the phase of emptying the container. In a completely filled state of the container, the CO<sub>2</sub> content would be totally different from when the container would be almost empty, since when completely filled the pressure inside the container would be highest (far higher than a desired equilibrium pressure for keeping the CO<sub>2</sub> content at the desired level), whereas when almost empty, the pressure would (or at least could) be so low that CO<sub>2</sub> would escape (i.e., brake out) of the beer because of the pressure being below the equilibrium pressure. The result is particularly true at desired relatively low temperatures of the beer.

It is respectfully submitted that a person skilled in the art of beer would, for improving dispensing, therefore never rely on devices in which the beer and CO<sub>2</sub> content are mixed at such (at least initially) high pressure levels. A person skilled in the art of beer would, for improving dispensing, therefore never rely on devices in which the beer and CO<sub>2</sub> content are mixed at such (at least initially) high pressure levels.

Secondly, atomizing beer (or any carbonated beverage) is totally unsuitable. By thus dispensing such beverage the CO<sub>2</sub> content would be diminished to about zero during dispensing, making the beverage undrinkable. For this additional reason, a person skilled in the art of beer would never resort to devices of the type shown in Miyazaki.

Thirdly, in the device of Miyazaki the piston and spring are present in a cap which is the operating means of the spray can/atomizer, as a replacement of the prior art solution as disclosed in Fig. 7 of Miyazaki.

Accordingly it is respectfully submitted that there is no disclosure of a pressure medium chamber, nor of a beverage chamber, no connection between two such chambers and nor disclosure of separate dispensing means in Miyazaki. In the Miyazaki patent the piston and chamber in which the spring is provided are moved together with the cap, for opening the valve of the spray can itself, wherein the piston does not operate the valve but is moved up and down only by the pressure difference between the space 42 and the spring.

Moreover and most importantly, the Examiner makes the assumption that in Fig. 1 an opening would be shown in an end wall of the space comprising the spring 6. Reference is made to (apparently) the two lines above the "W1" in said space. However, in Miyazaki there is no discussion or disclosure of such opening. For example in Fig. 3 - 6 there are no such lines.

Moreover, the text does not refer to such opening or its possible effects. Therefore it is respectfully submitted that more is being read in Miyazaki than is actually disclosed, and that the rejection of the claims based upon Miyazaki relies on hindsight.

Claim 2: Since Miyazaki does not disclose such opening, it is not in connection with the surroundings. Moreover, even if such opening would exist, in Lewis this would have no effect whatsoever. Indeed, if the wall 29 were said to be an end wall (which is not the case, see above) such opening would only bring the space below the cap 29 in communication with the “surroundings”, and not with the chamber bounded by the piston.

Claim 3 and 20: In Lewis the spring 50 is not positioned between the piston and the wall 29 (as is understood from the present disclosure, meaning “acting on” the piston and the wall.

Claim 4: In Lewis the pressure chamber surrounds (part of) the chamber 2 but is not provided within the chamber. In the application as filed this is clearly to be understood as “the chamber extends into the beverage space, surrounded at least partly/largely by the beverage.

Claim 5: The Examiner appears to include the housing 20 as part of the pressure chamber. This is irregular in view of the application as filed. For example, in claim 5, the pressure chamber is inserted through an opening in an end wall of the container into the space in which the beverage is contained. In Lewis it is explicitly discussed that beverage is prevented from entering into the space 19 by the cap 46, 47.

Claim 7: As discussed hereinabove, the respective features of the present invention are being misinterpreted. For example, in Lewis, the element 61 is fixed in its place by the ring 62 and is not movable in axial direction, not even by element (pin) 54.

Claim 8 - 9: It is totally unclear how the features of these claims can be read on Lewis. In Lewis the dispense opening is at the top, which is also the filling opening, whereas the pressure regulating element is spaced apart from that opening.

Claims 13 - 14: Lewis does not disclose an assembled pressure medium chamber and pressure regulating element according to the present invention, for insertion into a space containing beverage.

Claims 16 - 18: In Lewis the pressure regulating element is not and cannot be mounted inside the filling opening (defined by part 7) since then it cannot fulfill its purpose and function. Therefore Claims 16 - 18 are respectfully submitted novel and non-obvious over Lewis, as well.

## **THE PRESENT INVENTION – VALVE 12**

The following clarifying information is provided with respect to the structure and function of valve 12 of the present invention.

In Fig. 2 of the present application as filed, a cross-section is shown in perspective view. This cross-sectional view shows the valve 12 below the piston 19, operated by the spring 41 within the chamber of the housing 35. During use, pressure within the beverage containing space 2 will enter into the space 37 through opening 21, meaning that there will normally be an equilibrium between the space 2 and space 37. The piston will in that case be in a position such that the valve 12 is closed and no CO<sub>2</sub> gas will escape from the container 9 into the space 37 (and thus through opening 21 into space 2).

Once beverage is dispensed from the space 2, the pressure in said space 2 will drop. This will mean that the pressure within space 37 will also drop, providing an imbalance between the

pressure below the piston and the forced exerted on the piston by the spring, pushing the piston down, against the valve 12, opening it. This means that gas will be allowed to escape from the container 9 into the space 37 and, through opening 21, into space 2.

Since the gas in the container 9 has a high pressure, it will rapidly bring the pressure in the space 37 back up to the desired (regulating) pressure (preferably about equilibrium pressure for the CO<sub>2</sub> content of the beverage) pushing the piston back up again, against the spring force. Thus the valve 12 is closed again, preventing further flow of gas from the container.

This discussion shows that basically any valve can be used as valve 12, as long as it can be operated by the piston 19 for opening and will be closed again when the pressure exerted by the piston is (at least partly) removed.

In the actual product, an “aerosol valve” is used, which is commercially available and for example used in spray cans.

By way of example in US 6,415,963 an embodiment is shown of such valve, especially in Fig. 2. This patent has been assigned to the same assignee as the present application.

As can be seen, the valve 12 of the present application is the same or similar to (or can be embodied by) the valve 94 of the '963 patent (see e.g. column 5, lines 8 and further of US'963).

The piston 19 of the present application corresponds to piston 58 of US'963.

The opening 21 of the present application is represented by opening 64 of US'963. In operation the devices are, or at least can be the same as far as the valve 21/94 is concerned.

As can be seen in the embodiment of Fig. 2 of US'963, there is no spring in the chamber 60. In this embodiment the pressure is regulated by pressure build up in the chamber 60 (basically Boyle's law: (P\*V)/T=C).

In another application filed on behalf of the same assignee, other embodiments of such valves have been described, equally suitable for the purpose of valve 12 of the present application.

In US 6,745,922 aerosol valve type valves are described, used as dispensing valves for the beverage. However, similar (or even identical) valves could be used as valve 12 of the present application. In Fig. 2 of US '922, a female variant of such valve is described, which would be equally suitable, as would a tilting variant of such valve.

In the present application as filed on page 5, line 17 and page 7, last line, reference is made to NL1012922, which shows a similar valve with operating means in e.g. Fig. 8.

Again this shows an example of an aerosol valve type valve suitable for use in the present invention.

What is believed to be significant in the present invention is that the piston (or similar movable or deformable wall part of the housing) can operate the valve, for allowing or preventing gas to flow from the container 9 into the space 37 below the piston, and from there into the space 2 through opening 21.

It is respectfully submitted that the claims are in condition for allowance. Allowance is respectfully requested.

**EXTENSION OF TIME**

There is submitted herewith, a Petition for Extension of Time, together with the requisite fee. No additional fee(s) are believed to be due. Please charge any additional fee(s) and credit any overpayments to Deposit Account No. 01-0035.

Respectfully submitted,

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